Service Schematics

NOKIA E70

RM-10/24

Introduction

Important:

This document is intended for use by authorized service centers only.

“Service Schematics“ was created with focus on customer care.
The purpose of this document is to provide further technical repair information for NOKIA mobile phones on Level 3/4 service activities.
It contains additional information such as e.g. “Component finder”, “Frequency band table” or “Antenna switch table”.
The “Signal overview” page gives a good and fast overview about the most important signals and voltages on board.
Saving process time and improving the repair quality is the aim of this document.
It is to be used additionaly to the service manual and other training or service information such as Service Bulletins.

All measurements were made using following equipment:

Nokia repair SW	:	Phoenix version 2006.04.6.130
Oscilloscope	:	Fluke PM 3380A/B
Spectrum Analyzer	:	Advanced R3162 with an analog probe
RF-Generator/GSM Tester	:	Rhode & Schwarz CMU 200
Multimeter	:	Fluke 73 Series II

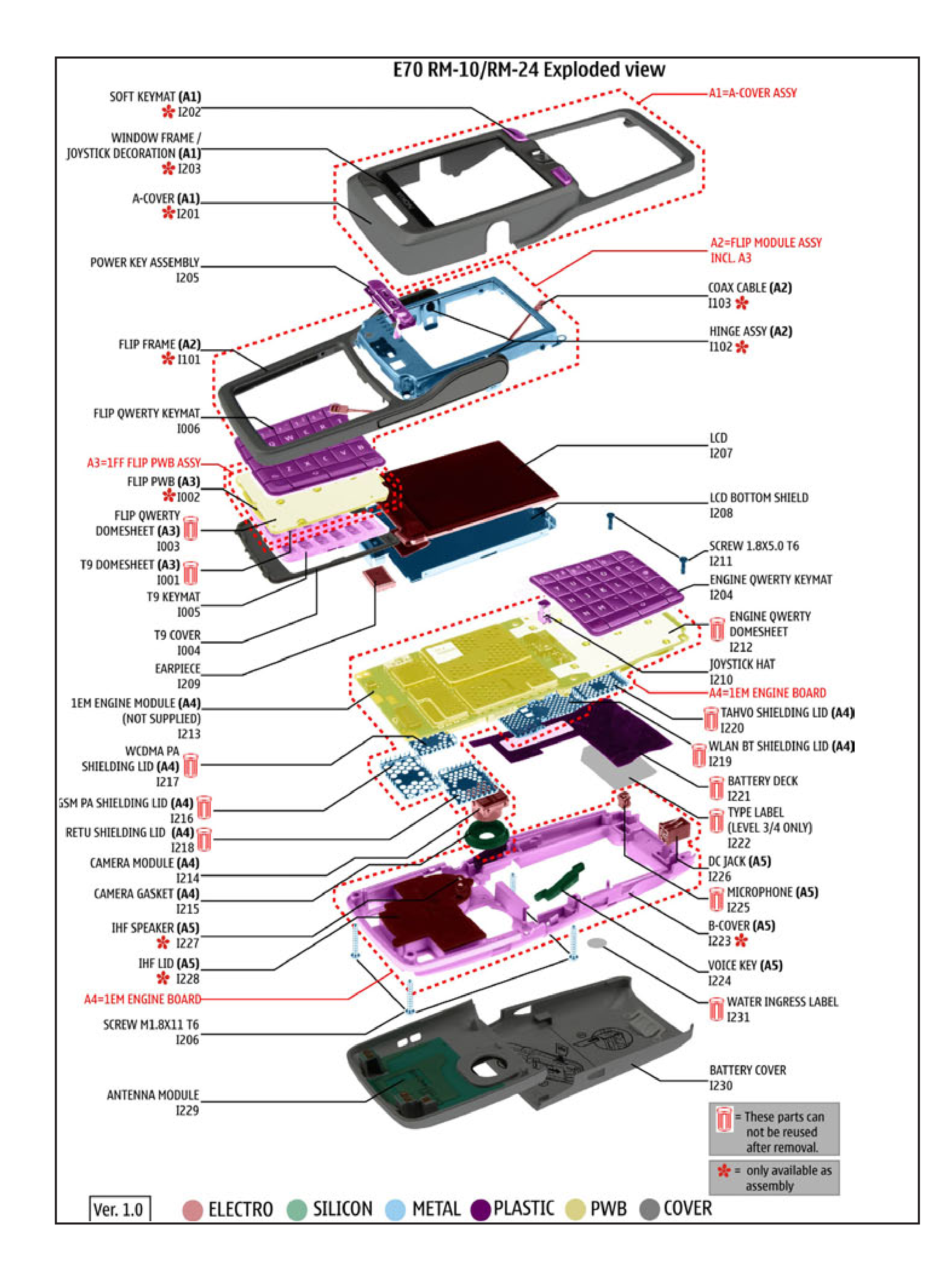
While every endeavour has been made to ensure the accuracy of this document, some errors may exist. If the reader finds any errors, NOKIA shall be notified in writing.

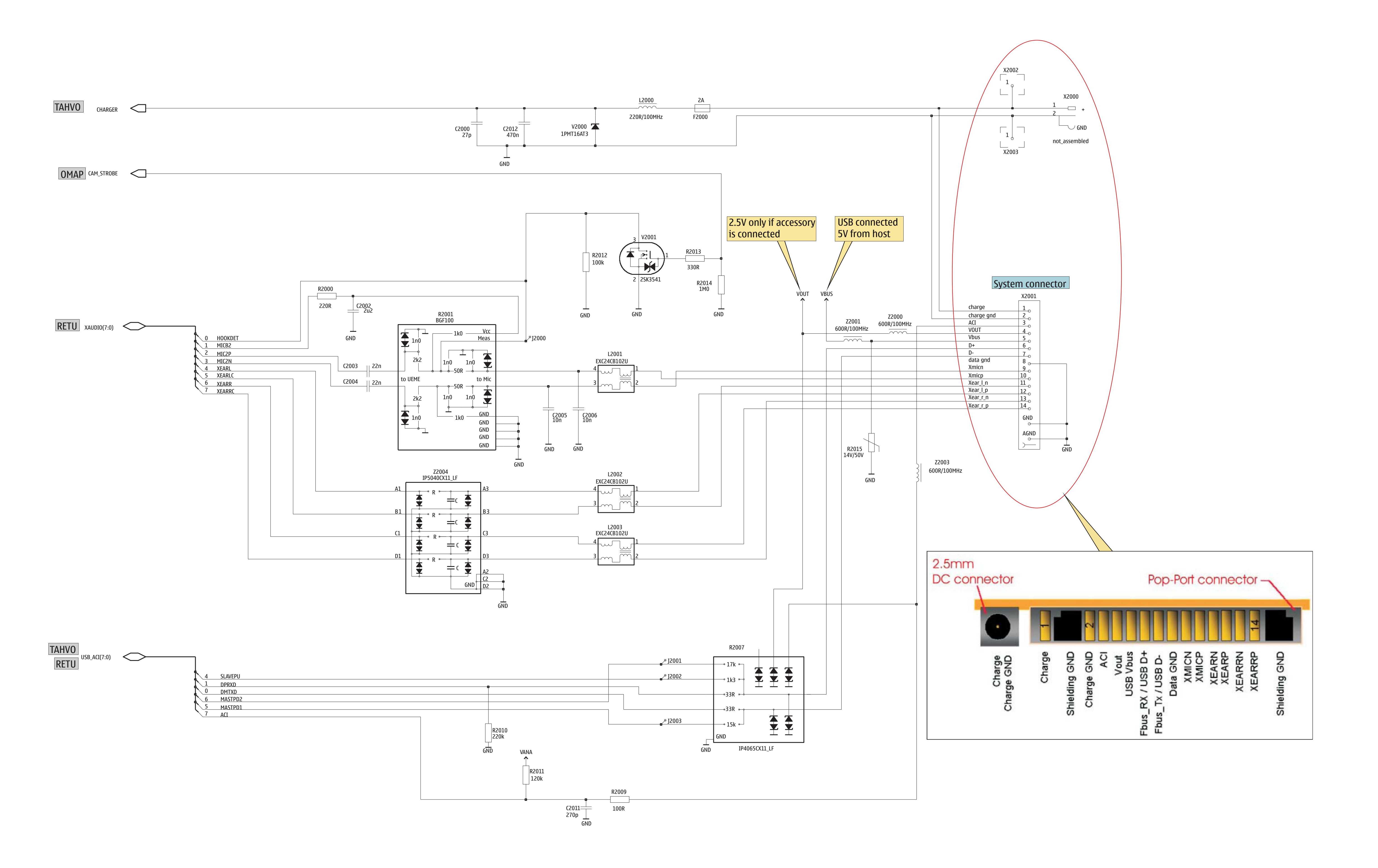
Please send E-Mail to: **training.sace@nokia.com**

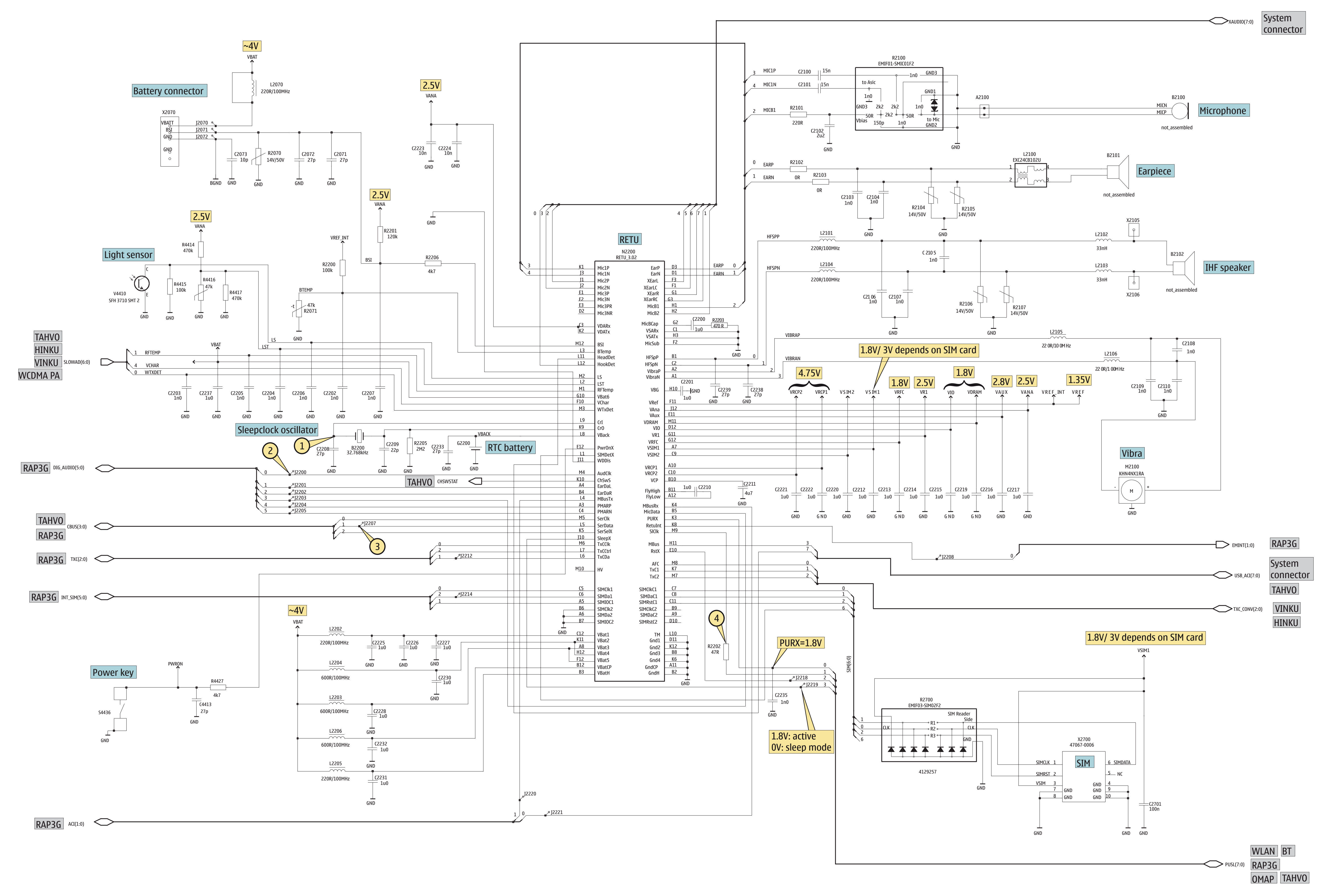


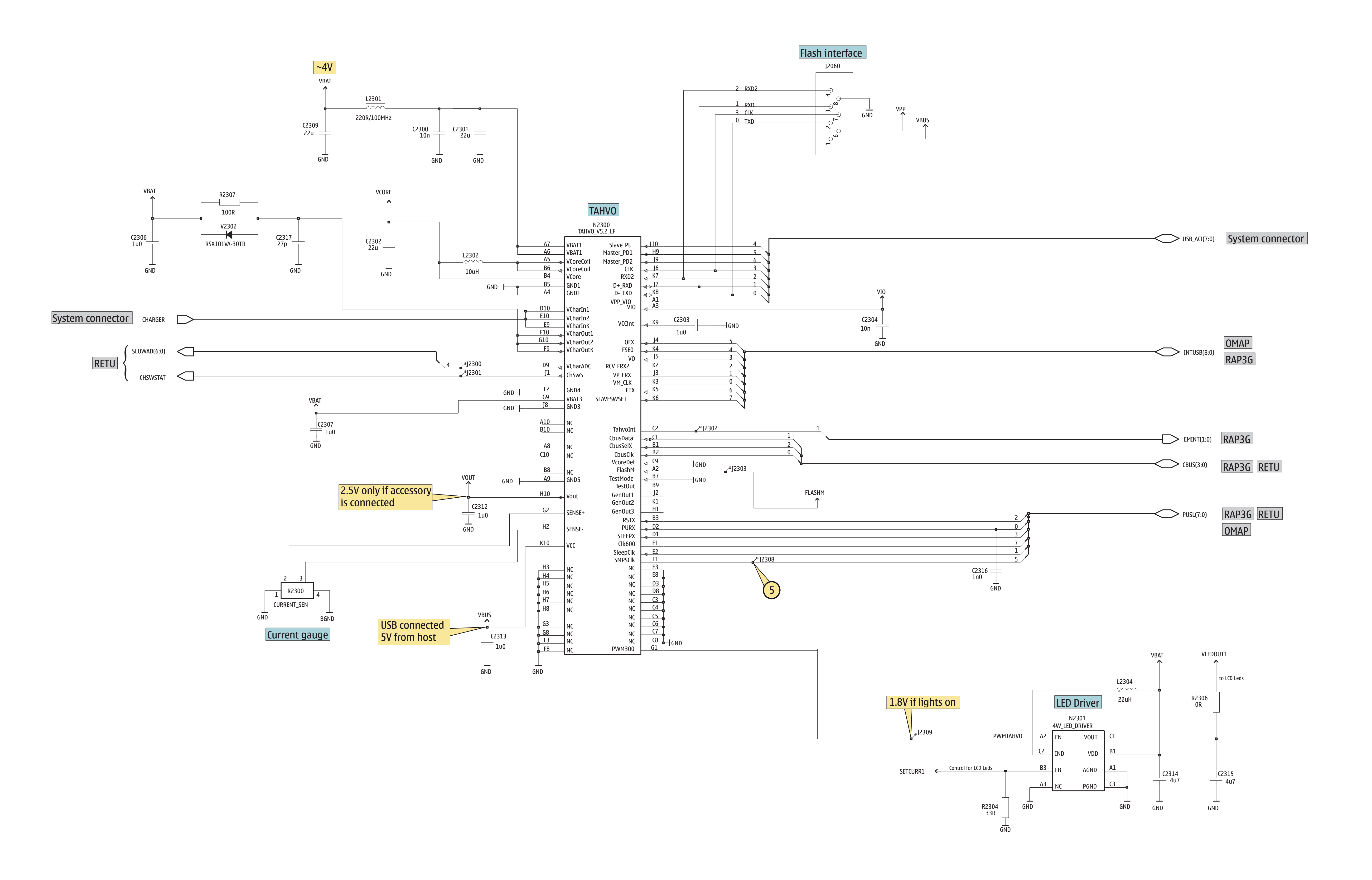
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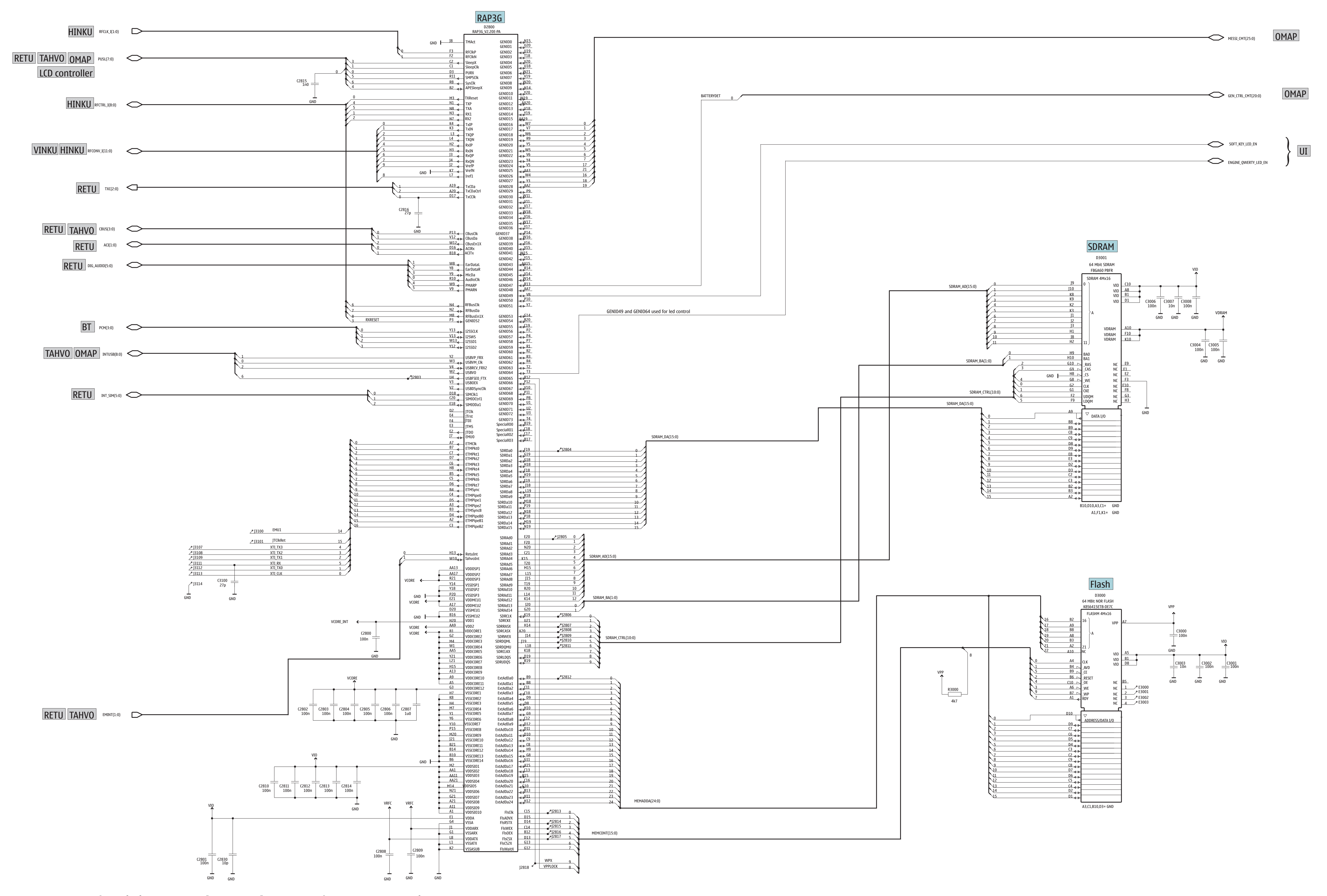
Exploded view and component disposal



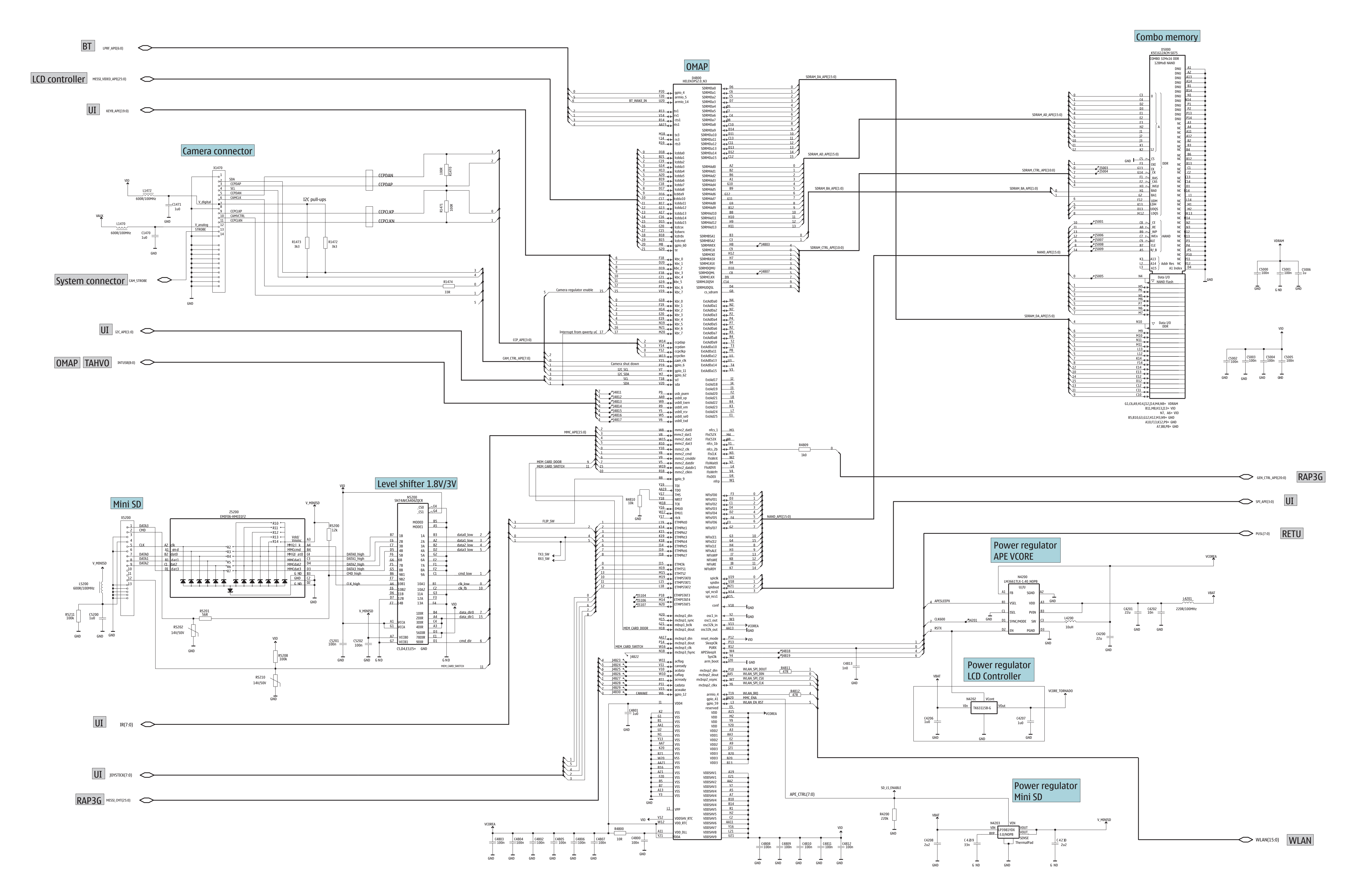

TAHVO
CHARGER
OMAP
CAM_STROBE
RETU
XAUDIO(7:0)
HOOKDET
MICB2
MIC2P
MIC2N
XEARL
XEARLC
XEARR
XEARRC
TAHVO
RETU
USB_ACI(7:0)
SLAVEPU
DPRXD
DMTXD
MASTPD2
MASTPD1
ACI
L2000
220R/100MHz
2A
F2000
C2000
27p
C2012
470n
V2000
1PMT16AT3
GND
X2002
X2000
X2003
not_assembled
V2001
2SK3541
R2013
330R
R2014
1M0
R2012
100k
2.5V only if accessory
is connected
USB connected
5V from host
VOUT
VBUS
System connector
X2001
charge
charge gnd
ACI
VOUT
Vbus
D+
D-
data gnd
Xmicn
Xmicp
Xear_l_n
Xear_l_p
Xear_r_n
Xear_r_p
AGND
R2000
220R
C2002
2u2
R2001
BGF100
Vcc
Meas
to UEME
to Mic
J2000
C2003
22n
C2004
22n
C2005
10n
C2006
10n
L2001
EXC24CB102U
Z2001
600R/100MHz
Z2000
600R/100MHz
R2015
14V/50V
Z2003
600R/100MHz
Z2004
IP5040CX11_LF
L2002
EXC24CB102U
L2003
EXC24CB102U
R2007
IP4065CX11_LF
J2001
J2002
J2003
R2010
220k
VANA
R2011
120k
C2011
270p
R2009
100R
2.5mm
DC connector
Pop-Port connector
Charge
Charge GND
Charge
Shielding GND
Charge GND
ACI
Vout
USB Vbus
Fbus_RX / USB D+
Fbus_Tx / USB D-
Data GND
XMICN
XMICP
XEARN
XEARP
XEARRN
XEARRP
Shielding GND

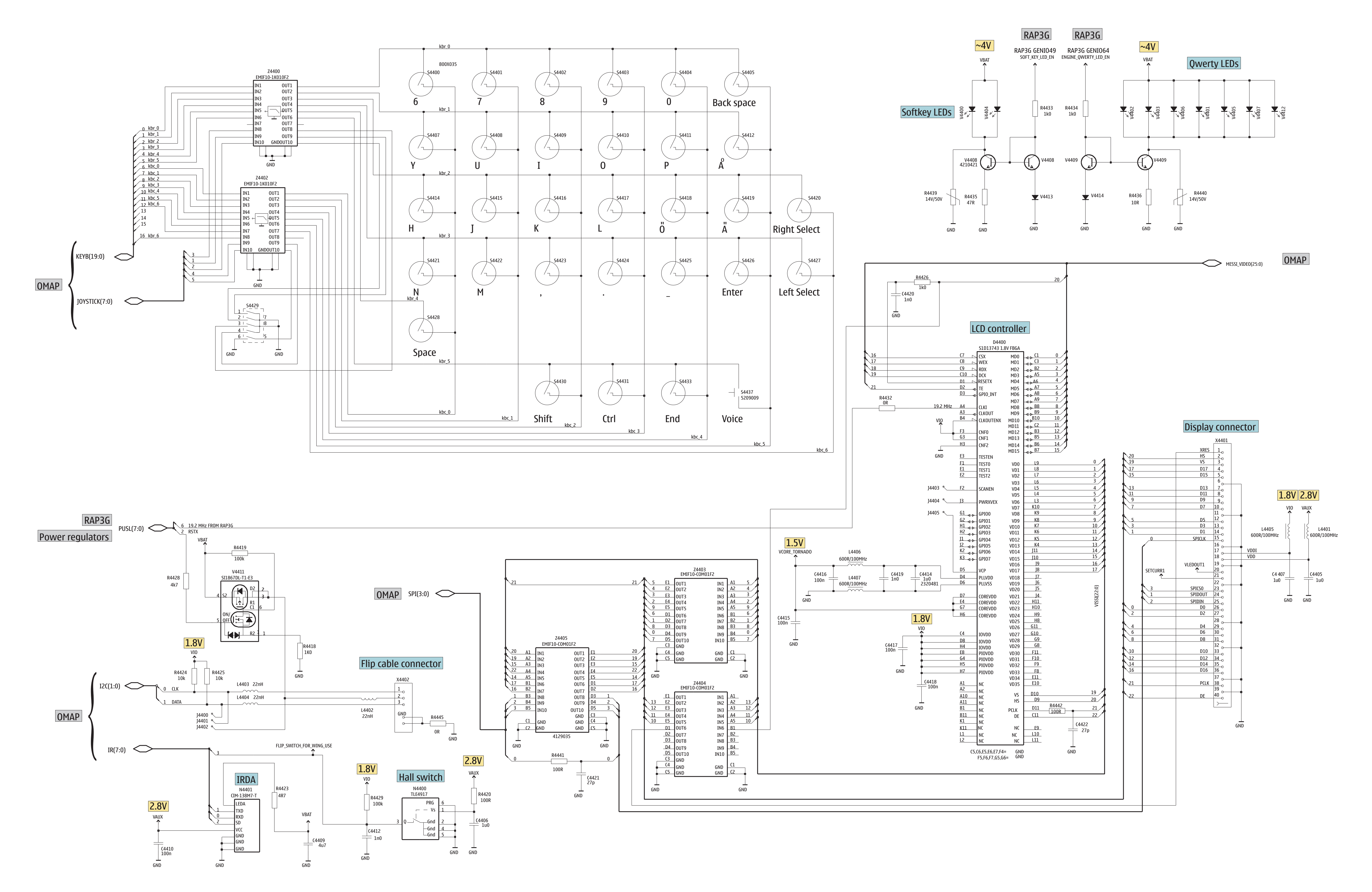

System connector
~4V
Battery connector
2.5V
Microphone
Earpiece
RETU
Light sensor
IHF speaker
TAHVO
HINKU
VINKU
WCDMA PA
1.8V/ 3V depends on SIM card
4.75V
1.8V
2.5V
1.8V
2.8V
2.5V
1.35V
Sleepclock oscillator
RTC battery
Vibra
RAP3G
TAHVO
RAP3G
RAP3G
RAP3G
System connector
TAHVO
VINKU
HINKU
~4V
1.8V/ 3V depends on SIM card
PURX=1.8V
Power key
1.8V: active
0V: sleep mode
SIM
RAP3G
WLAN
BT
RAP3G
OMAP
TAHVO


~4V
Flash interface
J2060
TAHVO
N2300
TAHVO_V5.2_LF
System connector
USB_ACI(7:0)
CHARGER
RETU
SLOWAD(6:0)
CHSWSTAT
OMAP
RAP3G
INTUSB(8:0)
EMINT(1:0)
CBUS(3:0)
PUSL(7:0)
FLASHM
2.5V only if accessory is connected
USB connected 5V from host
Current gauge
R2300
CURRENT_SEN
1.8V if lights on
LED Driver
N2301
4W_LED_DRIVER
PWMTAHVO
SETCURR1
Control for LCD Leds
VLEDOUT1
to LCD Leds

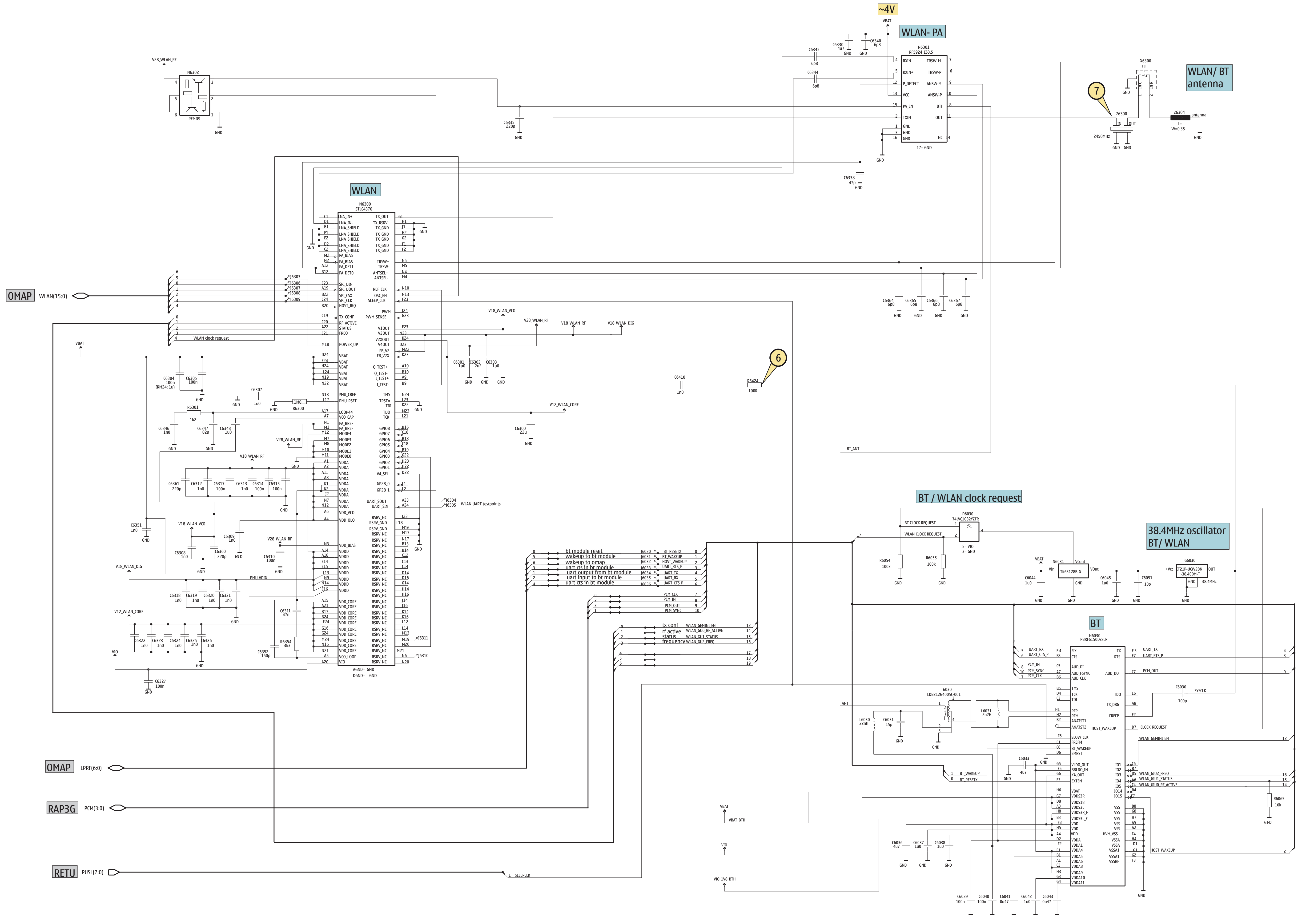


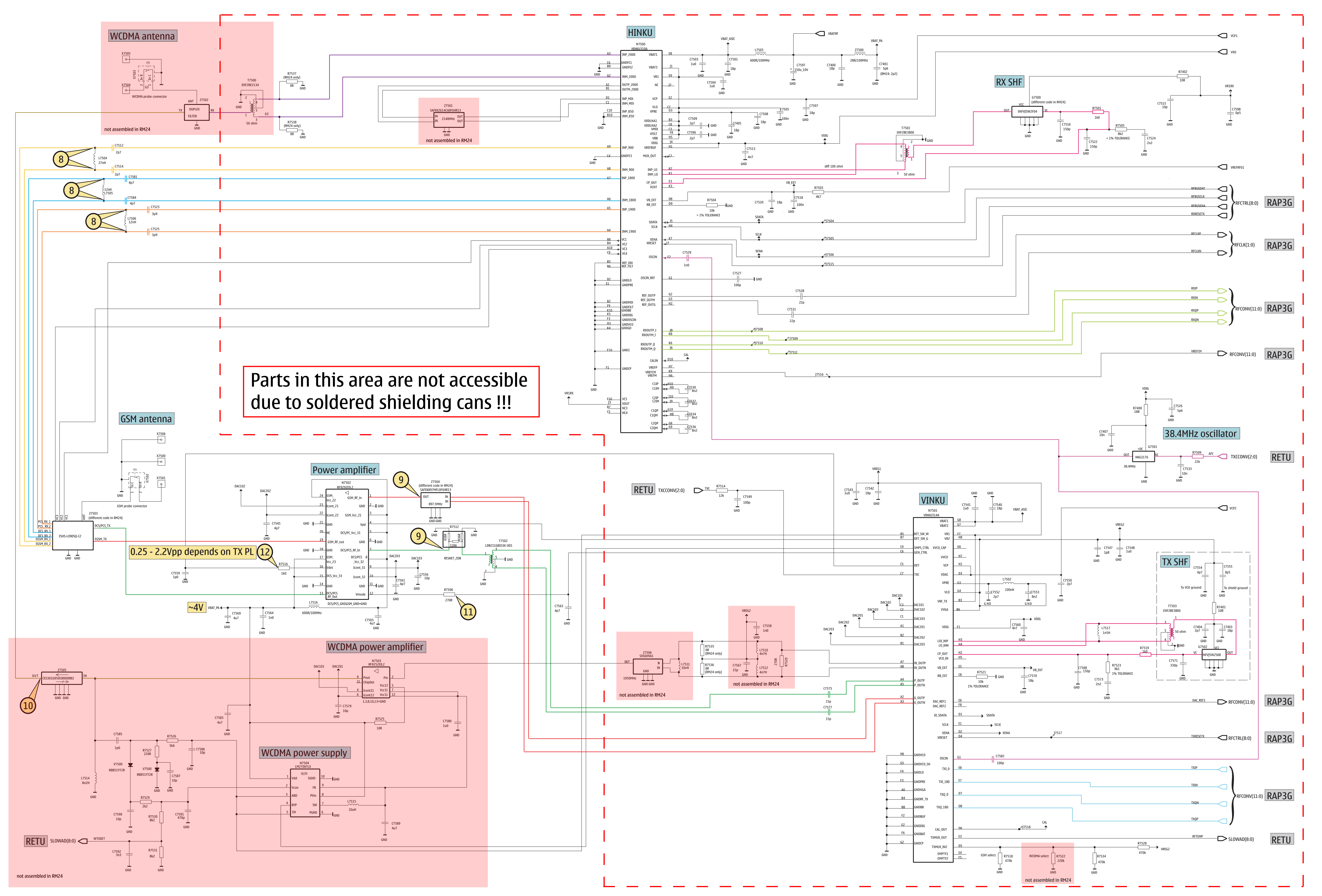
RAP3G
D2800
RAP3G_V2.20E-PA
HINKU
RETU
TAHVO
OMAP
LCD controller
VINKU
BT
UI
SDRAM
D3001
64 Mbit SDRAM
FBGA60 PBFR
SDRAM 4Mx16
Flash
D3000
64 MBit NOR FLASH
FLASHM 4Mx16
MESSI_CMT(25:0)
GEN_CTRL_CMT(20:0)
SOFT_KEY_LED_EN
ENGINE_QWERTY_LED_EN
BATTERYDET
GENIO49 and GENIO64 used for led control
SDRAM_AD(15:0)
SDRAM_BA(1:0)
SDRAM_CTRL(10:0)
SDRAM_DA(15:0)
MEMADDA(24:0)
MEMCONT(15:0)
VCORE
VCORE_INT
VIO
VRFC
VPP
VDRAM
GND


BT
LCD controller
UI
Camera connector
System connector
UI
OMAP
TAHVO
Mini SD
Level shifter 1.8V/3V
UI
UI
RAP3G
OMAP
Combo memory
RAP3G
UI
RETU
Power regulator
APE VCORE
Power regulator
LCD Controller
Power regulator
Mini SD
WLAN

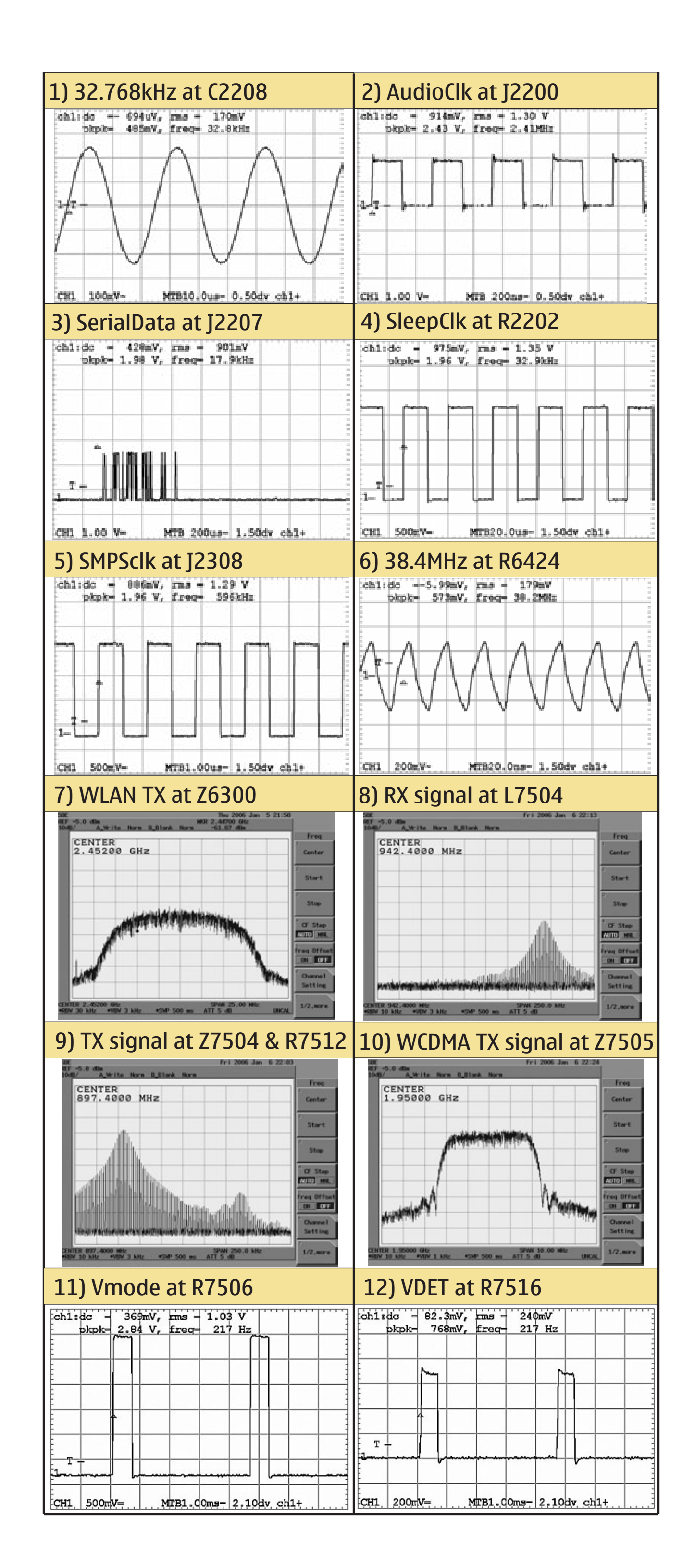


OMAP
KEYB(19:0)
JOYSTICK(7:0)
6
7
8
9
0
Back space
Y
U
I
O
P
Å
H
J
K
L
Ö
Ä
Right Select
N
M
,
.
_
Enter
Left Select
Space
Shift
Ctrl
End
Voice
~4V
RAP3G
RAP3G
~4V
Softkey LEDs
Qwerty LEDs
OMAP
MESSI_VIDEO(25:0)
LCD controller
Display connector
1.8V
2.8V
RAP3G
Power regulators
PUSL(7:0)
1.5V
OMAP
SPI(3:0)
1.8V
1.8V
Flip cable connector
OMAP
I2C(1:0)
IR(7:0)
IRDA
1.8V
Hall switch
2.8V
2.8V

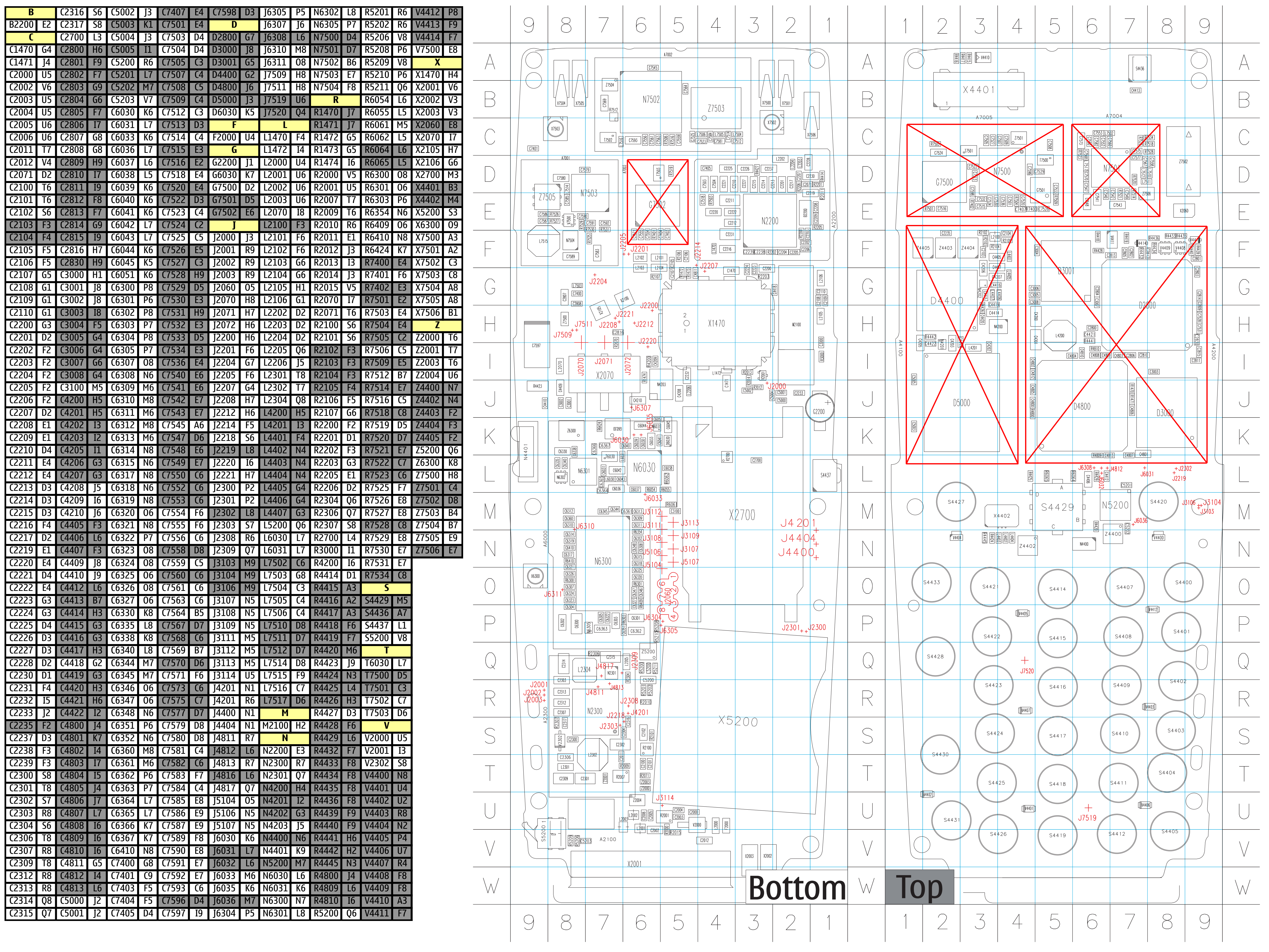

~4V
WLAN- PA
WLAN/ BT antenna
WLAN
OMAP
BT / WLAN clock request
38.4MHz oscillator BT/ WLAN
BT
OMAP
RAP3G
RETU



WCDMA antenna
HINKU
RX SHF
Parts in this area are not accessible due to soldered shielding cans !!!
GSM antenna
Power amplifier
38.4MHz oscillator
RETU
RAP3G
VINKU
TX SHF
0.25 - 2.2Vpp depends on TX PL
~4V
WCDMA power amplifier
WCDMA power supply
not assembled in RM24



VR1=2.5V
VRFC=1.8V
VANA=2.8V
VIO=1.8V
VRCP2=4.75V
VDRAM=1.8V
VRCP1=4.75V
VANA=2.5V
VBAT=4V



B		C2316	S6	C5002	J3	C7407	E4	C7598	D3	J6305	P5	N6302	L8	R5201	R6	V4412	P8
B2200	E2	C2317	S8	C5003	K1	C7501	E4	D		J6307	J6	N6305	P7	R5202	R6	V4413	F9
C		C2700	L3	C5004	J3	C7503	D4	D2800	G7	J6308	L6	N7500	D4	R5206	V8	V4414	F7
C1470	G4	C2800	H6	C5005	I1	C7504	D4	D3000	J8	J6310	M8	N7501	D7	R5208	P6	V7500	E8
C1471	J4	C2801	F9	C5200	R6	C7505	C3	D3001	G5	J6311	08	N7502	B6	R5209	V8	X	
C2000	U5	C2802	F7	C5201	L7	C7507	C4	D4400	G2	J7509	H8	N7503	E7	R5210	P6	X1470	H4
C2002	V6	C2803	G9	C5202	M7	C7508	C5	D4800	J6	J7511	H8	N7504	F8	R5211	Q6	X2001	V6
C2003	U5	C2804	G6	C5203	V7	C7509	C4	D5000	J3	J7519	U6	R		R6054	L6	X2002	V3
C2004	U5	C2805	F7	C6030	K6	C7512	C3	D6030	K5	J7520	Q4	R1470	J7	R6055	L5	X2003	V3
C2005	U6	C2806	I7	C6031	L7	C7513	D3	F		L		R1471	J7	R6061	M5	X2060	E8
C2006	U6	C2807	G8	C6033	K6	C7514	C4	F2000	U4	L1470	F4	R1472	G5	R6062	L5	X2070	I7
C2011	T7	C2808	G8	C6036	L7	C7515	E3	G		L1472	I4	R1473	G5	R6064	L6	X2105	H7
C2012	V4	C2809	H9	C6037	L6	C7516	E2	G2200	J1	L2000	U4	R1474	I6	R6065	L5	X2106	G6
C2071	D2	C2810	I7	C6038	L5	C7518	E4	G6030	K7	L2001	U6	R2000	V5	R6300	08	X2700	M3
C2100	T6	C2811	I9	C6039	K6	C7520	E4	G7500	D2	L2002	U6	R2001	U5	R6301	06	X4401	B3
C2101	T6	C2812	F8	C6040	K6	C7522	D3	G7501	D5	L2003	U6	R2007	T7	R6303	P6	X4402	M4
C2102	S6	C2813	F7	C6041	K6	C7523	C4	G7502	E6	L2070	I8	R2009	T6	R6354	N6	X5200	S3
C2103	F3	C2814	G9	C6042	L7	C7524	C2	J		L2100	F3	R2010	R6	R6409	06	X6300	09
C2104	F4	C2815	I9	C6043	L7	C7525	C5	J2000	J3	L2101	F6	R2011	E1	R6410	N8	X7500	A3
C2105	F5	C2816	H7	C6044	K6	C7526	E5	J2001	R9	L2102	F6	R2012	J3	R6424	K7	X7501	A2
C2106	F5	C2830	H9	C6045	K5	C7527	C3	J2002	R9	L2103	G6	R2013	I3	R7400	E4	X7502	C3
C2107	G5	C3000	H1	C6051	K6	C7528	H9	J2003	R9	L2104	G6	R2014	J3	R7401	F6	X7503	C8
C2108	G1	C3001	J8	C6300	P8	C7529	D5	J2060	05	L2105	H1	R2015	V5	R7402	E3	X7504	A8
C2109	G1	C3002	J8	C6301	P6	C7530	E3	J2070	H8	L2106	G1	R2070	I7	R7501	E2	X7505	A8
C2110	G1	C3003	I8	C6302	P8	C7531	H9	J2071	H7	L2202	D2	R2071	T6	R7503	E4	X7506	B1
C2200	G3	C3004	F5	C6303	P7	C7532	E3	J2072	H6	L2203	D2	R2100	S6	R7504	E4	Z	
C2201	D2	C3005	G4	C6304	P8	C7533	D5	J2200	H6	L2204	D2	R2101	S6	R7505	C2	Z2000	T6
C2202	F2	C3006	G4	C6305	P7	C7534	E3	J2201	F6	L2205	Q6	R2102	F3	R7506	C5	Z2001	T7
C2203	F2	C3007	G6	C6307	08	C7536	E4	J2204	G7	L2206	J5	R2103	F3	R7509	E5	Z2003	T6
C2204	F2	C3008	G4	C6308	N6	C7540	E6	J2205	F6	L2301	T8	R2104	F3	R7512	B7	Z2004	U6
C2205	F2	C3100	M5	C6309	M6	C7541	E6	J2207	G4	L2302	T7	R2105	F4	R7514	E7	Z4400	N7
C2206	F2	C4200	H5	C6310	M8	C7542	E7	J2208	H7	L2304	Q8	R2106	F5	R7516	C5	Z4402	N4
C2207	D2	C4201	H5	C6311	M6	C7543	E7	J2212	H6	L4200	H5	R2107	G6	R7518	C8	Z4403	F2
C2208	E1	C4202	I3	C6312	M8	C7545	A6	J2214	F5	L4201	I3	R2200	F2	R7519	D5	Z4404	F3
C2209	E1	C4203	I2	C6313	M6	C7547	D6	J2218	S6	L4401	F4	R2201	D1	R7520	D7	Z4405	F2
C2210	D4	C4205	I1	C6314	N8	C7548	E6	J2219	L8	L4402	N4	R2202	F3	R7521	E7	Z5200	Q6
C2211	E4	C4206	G3	C6315	N6	C7549	E7	J2220	I6	L4403	N4	R2203	G3	R7522	C7	Z6300	K8
C2212	E4	C4207	G3	C6317	N8	C7550	C6	J2221	H7	L4404	N4	R2205	E1	R7523	C6	Z7500	H8
C2213	D3	C4208	J5	C6318	N6	C7552	C6	J2300	P2	L4405	G4	R2206	D2	R7525	F7	Z7501	C4
C2214	D3	C4209	I6	C6319	N8	C7553	C6	J2301	P2	L4406	G4	R2304	Q6	R7526	E8	Z7502	D8
C2215	D3	C4210	J6	C6320	06	C7554	F6	J2302	L8	L4407	G3	R2306	Q7	R7527	E8	Z7503	B4
C2216	F4	C4405	F3	C6321	N8	C7555	F6	J2303	S7	L5200	Q6	R2307	S8	R7528	C8	Z7504	B7
C2217	D2	C4406	L6	C6322	P7	C7556	C6	J2308	R6	L6030	L7	R2700	L4	R7529	E8	Z7505	E9
C2219	E1	C4407	F3	C6323	08	C7558	D8	J2309	Q7	L6031	L7	R3000	I1	R7530	E7	Z7506	E7
C2220	E4	C4409	J8	C6324	08	C7559	C5	J3103	M9	L7502	C6	R4200	I6	R7531	E7		
C2221	D4	C4410	J9	C6325	06	C7560	C6	J3104	M9	L7503	G8	R4414	D1	R7534	C8		
C2222	E4	C4412	L6	C6326	08	C7561	C6	J3106	M9	L7504	C3	R4415	A3	S			
C2223	G3	C4413	B7	C6327	06	C7563	C6	J3107	N5	L7505	C4	R4416	A2	S4429	M5		
C2224	G3	C4414	H3	C6330	K8	C7564	B5	J3108	N5	L7506	C4	R4417	A3	S4436	A7		
C2225	D4	C4415	G3	C6335	L8	C7567	D7	J3109	N5	L7510	D8	R4418	F6	S4437	L1		
C2226	D3	C4416	G3	C6338	K8	C7568	C6	J3111	M5	L7511	D7	R4419	F7	S5200	V8		
C2227	D3	C4417	H3	C6340	L8	C7569	B7	J3112	M5	L7512	D7	R4420	M6	T			
C2228	D2	C4418	G2	C6344	M7	C7570	D6	J3113	M5	L7514	D8	R4423	J9	T6030	L7		
C2230	D1	C4419	G3	C6345	M7	C7571	F6	J3114	U5	L7515	F9	R4424	N3	T7500	D5		
C2231	F4	C4420	H3	C6346	06	C7573	C6	J4201	N1	L7516	C7	R4425	L4	T7501	C3		
C2232	I5	C4421	H6	C6347	06	C7575	C7	J4201	R6	L7517	D6	R4426	H3	T7502	C7		
C2233	J2	C4422	I2	C6348	N6	C7577	D7	J4400	N1	M		R4427	D3	T7503	D6		
C2235	F2	C4800	J4	C6351	P6	C7579	D8	J4404	N1	M2100	H2	R4428	F6	V			
C2237	D3	C4801	K7	C6352	N6	C7580	D8	J4811	R7	N		R4429	L6	V2000	U5		
C2238	F3	C4802	I4	C6360	M8	C7581	C4	J4812	L6	N2200	E3	R4432	F7	V2001	I3		
C2239	F3	C4803	I7	C6361	M6	C7582	C6	J4813	R7	N2300	R7	R4433	F8	V2302	S8		
C2300	S8	C4804	I5	C6362	P6	C7583	F7	J4816	L6	N2301	Q7	R4434	F8	V4400	N8		
C2301	T8	C4805	J4	C6363	P7	C7584	C4	J4817	Q7	N4200	H4	R4435	F8	V4401	U4		
C2302	S7	C4806	J7	C6364	L7	C7585	E8	J5104	05	N4201	I2	R4436	F8	V4402	U2		
C2303	R8	C4807	L7	C6365	L7	C7586	E9	J5106	N5	N4202	G3	R4439	F9	V4403	R8		
C2304	S6	C4808	I6	C6366	K7	C7587	E9	J5107	N5	N4203	J5	R4440	F9	V4404	N2		
C2306	T8	C4809	I6	C6367	K7	C7589	F8	J6030	K6	N4400	N6	R4441	H6	V4405	P4		
C2307	R8	C4810	I6	C6410	N8	C7590	E8	J6031	L7	N4401	K9	R4442	H2	V4406	U7		
C2309	T8	C4811	G5	C7400	G8	C7591	E7	J6032	L6	N5200	M7	R4445	N3	V4407	R4		
C2312	R8	C4812	I4	C7401	C9	C7592	E7	J6033	M6	N6030	L6	R4800	J4	V4408	F8		
C2313	R8	C4813	L6	C7403	F5	C7593	C6	J6035	K6	N6031	K6	R4809	L6	V4409	F8		
C2314	Q8	C5000	J2	C7404	F5	C7596	D4	J6036	M7	N6300	N7	R4810	I6	V4410	A3		
C2315	Q7	C5001	J2	C7405	D4	C7597	I9	J6304	P5	N6301	L8	R5200	Q6	V4411	F7		